

WHAT IS CLAIMED:

1. A wireless communications device comprising:
a power amplifier configured to transmit information to a wireless
5 communications network during a first time interval and configured to avoid
transmitting information during a second time interval;
a circuit substrate coupled to the power amplifier;
a power source configured to provide power to the power amplifier; and
first and second conductors, coupled to the power amplifier and to the power
10 source, having respective overlapping and non-overlapping portions on the circuit
substrate.
2. A wireless communications device according to Claim 1 wherein the
first and second conductors comprise first and second etch runs coupling the power
15 source to the power amplifier.
3. A wireless communications device according to Claim 1 wherein the
circuit substrate comprises a printed circuit board or a flexible circuit board.
- 20 4. A wireless communications device according to Claim 1 wherein the
first conductor is configured to conduct a first current in a first direction to the power
amplifier and the second conductor is configured to accept a second current in a
second direction, opposite the first direction, from the power amplifier.
- 25 5. A wireless communications device according to Claim 4 wherein the
first and second currents comprise first and second Direct Currents (DC) switched
on/off at a frequency in a range between about 50 Hz and about 217 Hz responsive to
operation of the power amplifier.
- 30 6. A wireless communications device according to Claim 1 wherein the
respective over-lapping portion of the first conductor extends on a lower layer of the
circuit substrate beneath the respective over-lapping portion of the second conductor
on an upper layer of the circuit substrate.

7. A wireless communications device according to Claim 6 wherein the respective over-lapping portions define about an orthogonal angle with one another.

5 8. A wireless communications device according to Claim 6 wherein the overlapping and non-overlapping portions of the first conductor continuously extend on the lower layer and the overlapping and non-overlapping portions of the second conductor continuously extend on the upper layer.

10 9. A wireless communications device according to Claim 8 wherein the continuously extending first and second conductors define first and second partially overlapping zigzag patterns relative to one another.

15 10. A wireless communications device according to Claim 6 wherein the overlapping and non-overlapping portions of the first and second conductors alternately extend between the lower layer and the upper layer.

20 11. A wireless communications device according to Claim 8 wherein the alternately extending first and second conductors define first and second partially overlapping zigzag patterns relative to one another.

25 12. A wireless communications device according to Claim 6 wherein the lower layer and the upper layer comprise layers that are either separated by one or more other layers or are immediately adjacent layers.

30 13. A wireless communications device according to Claim 1 wherein a spacing between immediately adjacent overlapping portions of the first and second conductors is based on a frequency with which current to the power amplifier is switched.

14. A wireless communications device comprising:
a power amplifier configured to transmit information to a wireless communications network during a first time interval and configured to avoid transmitting information during a second time interval;

a circuit substrate coupled to the power amplifier;
a power source configured to provide power to the power amplifier; and
first and second conductors on the substrate, coupled to the power amplifier
and to the power source, continuously extending on lower and upper layers of the
5 circuit substrate respectively to define first and second partially overlapping zigzag
patterns relative to one another.

15. A wireless communications device according to Claim 14 wherein a
spacing between immediately adjacent overlapping portions of the first and second
10 conductors is based on a frequency with which current to the power amplifier is
switched.

16. A wireless communications device according to Claim 14 wherein the
first conductor is configured to conduct a first current in a first direction to the power
15 amplifier and the second conductor is configured to accept a second current in a
second direction, opposite the first direction, from the power amplifier.

17. A wireless communications device according to Claim 16 wherein the
first and second currents comprise first and second Direct Currents (DC) switched
20 on/off at a frequency in a range between about 50 Hz and about 217 Hz responsive to
operation of the power amplifier.

18. A printed circuit board comprising:
first and second etch runs on a circuit substrate coupling a power amplifier to a
25 power source, and configured to conduct first and second respective opposing currents
to/from the power amplifier to reduce electromagnetic coupling from the first and
second etch runs to a hearing aid proximate to the wireless communications device.

19. A wireless communications device comprising:
30 a power amplifier configured to transmit information to a wireless
communications network during a first time interval and configured to avoid
transmitting information during a second time interval;
a circuit substrate coupled to the power amplifier;
a power source configured to provide power to the power amplifier; and

first and second conductors on the substrate, coupled to the power amplifier and to the power, having respective overlapping and non-overlapping portions alternately extending between a lower layer of the substrate and an upper layer of the substrate.

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20. A printed circuit board configured for use in a radotelephone comprising:

a circuit substrate configured to couple a power amplifier to a power source;

10 first and second conductors on the substrate, coupled to the power amplifier and to the power, having respective overlapping and non-overlapping portions alternately extending between a lower layer of the substrate and an upper layer of the substrate.